



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2005**

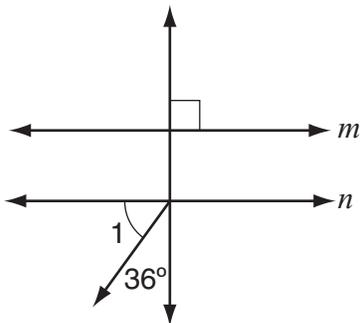
**Grade 8
Mathematics**

Mathematics

- 1 Nick uses $\frac{1}{4}$ cup of vinegar for every 1 cup of olive oil when making salad dressing. Using this recipe, how much vinegar would he need to make salad dressing with 12 cups of olive oil?

- A. $2\frac{1}{2}$ cups
- B. 3 cups
- C. $5\frac{1}{4}$ cups
- D. 6 cups

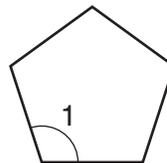
- 2 In the diagram below, lines m and n are parallel.



What is the measure of $\angle 1$?

- A. 54°
- B. 64°
- C. 90°
- D. 144°

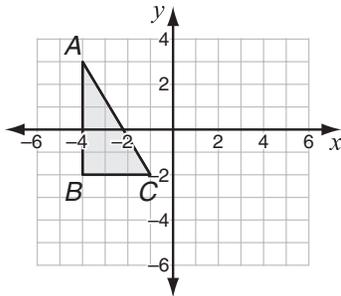
- 3 Look at this regular pentagon.



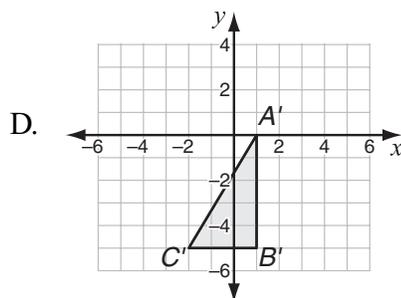
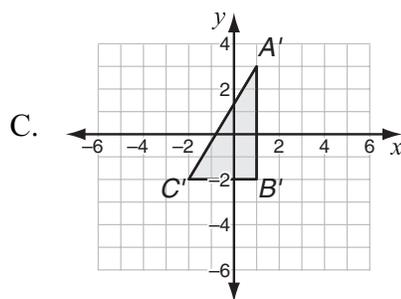
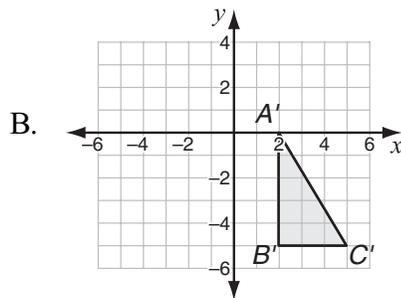
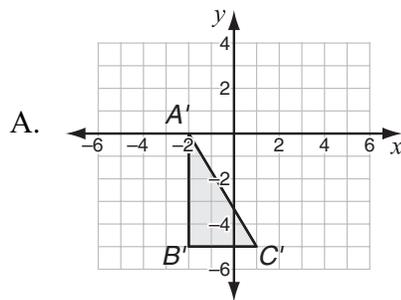
What is the measure of $\angle 1$?

- A. 36°
- B. 72°
- C. 108°
- D. 110°

- 4 Look at this diagram.



Triangle ABC is translated 2 units to the right and 3 units down. Which triangle is the image of triangle ABC after this translation?



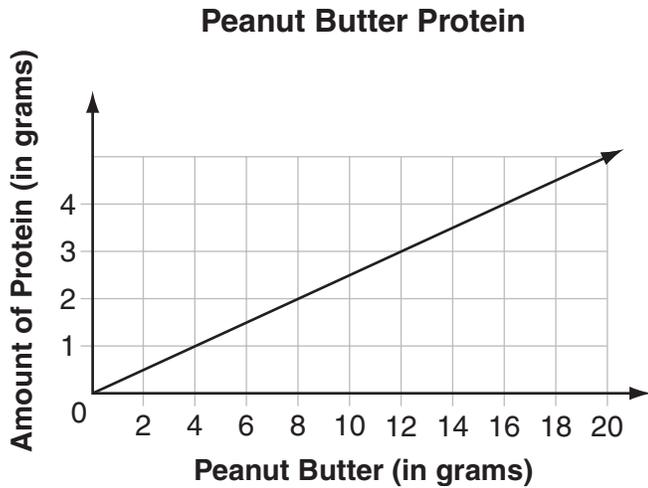
- 5 Mandy is buying mats for an exercise class. The pricing chart below is missing some prices.

Number of Mats	Cost for Each Mat
1–4	\$14.00
5–9	\$12.65
10–14	\$11.30
15–19	\$ 9.95
20–24	
25–29	
30+	\$ 5.90

Based on the pattern in the chart, how much will each mat cost if Mandy buys 26 mats?

- A. \$6.25
 B. \$7.25
 C. \$7.93
 D. \$8.60

- 6 Look at this graph.



How many grams of protein are in each gram of peanut butter?

- A. $\frac{1}{4}$
 B. $\frac{1}{2}$
 C. $\frac{2}{1}$
 D. $\frac{4}{1}$
- 7 The equation below shows the profit, p , from selling n cups of lemonade.

$$p = 2n - 10$$

Which of the following best describes the relationship between p and n ?

- A. As n increases, p decreases.
 B. As n increases, p increases.
 C. As n increases, p stays the same.
 D. As n increases, p sometimes increases and sometimes decreases.

- 8 A large bag of cement weighs 80 pounds. The bag weighs 2 pounds less than the weight of 3 small boxes of cement. Which equation can be used to find the weight, w , in pounds, of each small box of cement?

- A. $2 - 3w = 80$
 B. $3 - 2w = 80$
 C. $2w - 3 = 80$
 D. $3w - 2 = 80$

- 9 The table below shows the number of books the Jefferson Middle School students read each month for nine months.

Month	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Number of Books	293	280	266	280	289	279	275	296	271

If the students read only 101 books for the month of June, which measure of central tendency will have the greatest change?

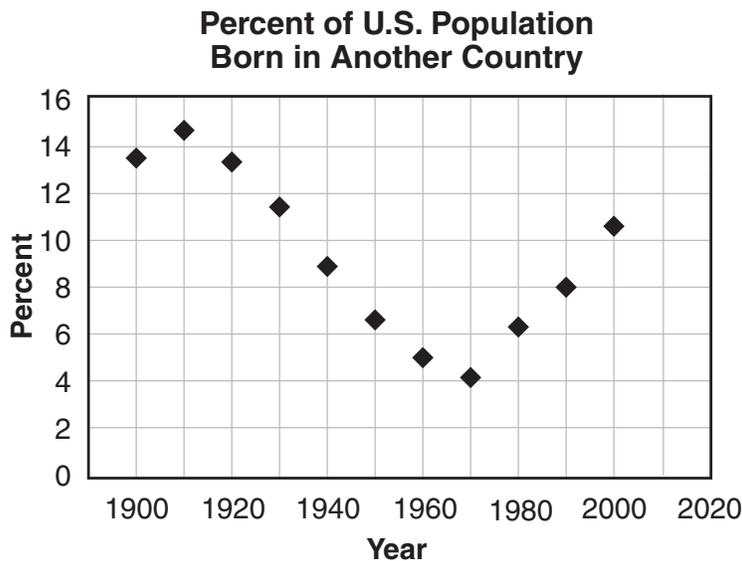
- A. The mean will have the greatest change.
 B. The median will have the greatest change.
 C. The mode will have the greatest change.
 D. All measures will have an equal change.

- 10 A mathematics game uses a set of 44 cards. There are 4 cards for each of the numerals 0–9 and 4 wild cards. If the cards are shuffled, what is the probability that the top card is a wild card?

- A. $\frac{1}{4}$
- B. $\frac{1}{11}$
- C. $\frac{1}{22}$
- D. $\frac{1}{44}$

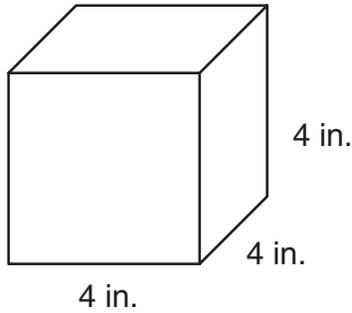
- 11 Brett bought a fishbowl for \$8.00 and n goldfish for \$1.50 each. He used a coupon for \$2.00 off his purchases. Write an algebraic expression that represents the amount of money Brett paid for his purchases.

- 12 The graph below shows the percent of the U.S. population born in another country.



If the trend since 1970 continues, in 2010 approximately what percent of the U.S. population will have been born in another country?

- 13 Each edge of this cube is 4 inches long.



What is the surface area of the cube in square inches? Show your work or explain how you know.

- 14 Look at this pattern.

0, 2, 6, 12, 20, . . .

- Write the next **two** numbers in the pattern.
- Use words or symbols to describe the pattern.

- 15 Three music stores are having CD sales this week. The signs below describe the sales at each store.

<p>The Music Store</p> <p>All CDs— Take 30% off the original price!</p>
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<p>The Sound Shop</p> <p>All CDs— Take $\frac{1}{4}$ off the original price!</p>
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<p>The Listening Corner</p> <p>All CDs— Pay $\frac{2}{3}$ of the original price!</p>
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Jeremy wants to buy a CD that had the same original price at all three stores.

List the stores in order from the one where the CD is the **least expensive** to the one where it is the **most expensive**. Show your work or explain how you know.

Grade 8 Mathematics Released Item Information

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Calculator Allowed				✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Content Strand ¹	NO	GM	GM	GM	FA	FA	FA	FA	DP	DP	FA	DP	GM	FA	NO
GLE Code	7-4	7-1	7-2	7-4	7-1	7-2	7-2	7-4	7-2	7-5	7-3	7-1	7-6	7-1	7-2
Depth of Knowledge Code	2	1	2	2	2	1	2	2	2	1	2	2	2	3	2
Item Type ²	MC	SA	SA	SA	SA	CR									
Answer Key	B	A	C	A	B	A	B	D	A	B					
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4

¹Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

²Item Type: MC = Multiple-Choice, SA = Short Answer, CR = Constructed Response